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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
GHULAMALI, QUTBUDDIN	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/581,007	LOHR, GEORG	
	Examiner	Art Unit	
	Qutub Ghulamali	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *41-84* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *41-84* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Acknowledgment

1. This Office Action is responsive to the Amendment filed by the applicant on 07/19/2006.

Response to Remarks/Amendment

2. Applicant's remarks/amendment, (pages 9-13), filed 07/19/2006, with reference to claims 41, 59 and 79, rejected under 35 U.S.C. § 103(a) have been fully considered but they are not persuasive. The rejection is maintained. The rejection and response to applicant's remarks follow.

Response to Remarks

3. The applicant's Remark/Argument filed 07/19/2006, pages 8-11, regarding claims 41, 42 and 59, have been fully considered but they are not persuasive.

Applicant's remarks - With reference to claims 41, 42 and 59, the applicant asserts, that Faroudja fails to anticipate "the spectral power density is reduced without a bandwidth of the output signal being substantially changed".

The examiner's response – The examiner disagrees. The examiner respectfully, would like to draw applicant's attention to Faroudja, col. 6, lines 4-32, 47-65, Faroudga discloses a folding process and an unfolding process wherein the spectral gaps are

filled or folded over in a mid-band region of the spectrum by modulation at the transmitter side (record) and reproduced at the receiver side (playback) to provide an unfolded signal substantially identical in characteristics to the transmitted (record) signal, without affecting the overall bandwidth of the signal spectrum. A part of the folding process is illustrated in the frequency spectrum in fig. 9c, which is similar to the information graphed in fig. 3c disclosing no substantial change in bandwidth (col. 10, lines 62-67; col. 11, lines 1-12, 52-60; col. 12, lines 56-61). Faroudja further discloses the advantage of folding and unfolding process with a careful selection of the clock frequency to enable recovery of the desired alias. Therefore, Faroudja disclosure, clearly and ambiguously satisfy the claim limitation. Therefore, based on the explanation provided herein, the rejection is maintained.

The applicant further remarks that nowhere in Fullerton is there any mention of what would occur to the bandwidth of the output signal as a result of modulation. The teaching offered by Faroudja is not to reduced the bandwidth of the signal spectrum but to enhance the spectral gaps by fill-in or folding of the line frequency between energy groups in the spectrum of high frequency information signal and a person of ordinary skill in the art would be motivated to combine it with the teaching offered by Fullerton so as to provide energy (power) smoothing in the frequency domain of information bandwidth (abstract; col. 3, lines 55-67).

As to applicant's remarks regarding Fullerton not disclosing modulators independent of transmission and reception, the examiner respectfully would like to draw applicant's attention to Fullerton (col. 13, lines 46-54; col. 14, lines 1-13; col. 16, lines 47-65; col.

17, lines 1-20), wherein Fullerton shows modulated subcarriers for time positioning a periodic timing signal can be mixed (or summed) with the modulated subcarrier. Furthermore, Fullerton discloses separate modulation of information signal and carrier modulation modulated with information as separate from carrier modulation (col. 13, lines 61-67; col. 14, lines 1-13).

Based on the explanation provided and in view of the clear and unambiguous disclosure in the art cited, the examiner concludes the rejection is valid and proper.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 41-84 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al (USP 5,995,534) in view of Faroudja (USP 4,831,463).

With reference to claims 41, Fullerton discloses low-interference signal transmission system comprising:

a transmitter for generating an output signal to be transmitted via a transmission circuit (antenna), the signal having substantially a line spectrum (col. 2, lines 10-16; col. 6, lines 42-53; col. 13, lines 19-28, 30-42);

a modulator unit associated with the transmitter for modulating the output signal to be transmitted, or a carrier signal of transmitting means in the transmitter, or the output

signal at any site in the transmission circuit, independently of a modulation technique selected for the purpose of signal transmission (col. 13, lines 46-54; col. 14, lines 1-13); a receiver, spatially separated from the transmitter, for receiving a modulated transmitted signal via the transmission circuit (col. 16, lines 47-65; col. 17, lines 1-20). Fullerton though discloses modulator for modulating transmitted signal however, does not explicitly disclose wherein the modulator unit modulates the signal so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased (the claim implies no substantial increase ***or*** decrease) (abstract; col. 2, lines 27-47; col. 6, lines 60-67; col. 16, lines 50-65). Faroudja in a similar field of endeavor discloses modulator unit modulates the signal so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a modulator to modulate signal so that spectral lines of the output signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased as taught by Faroudja in the transmission system of Fullerton because it can provide energy (power) smoothing in the frequency domain of information bandwidth.

As per claim 42, Fullerton discloses modulator unit modulates the output signal to be transmitted independently of a transmission cycle (col. 15, lines 46-59).

Regarding claims 59 and 60, Fullerton discloses low-interference transmission of a signal comprising:

generating an output signal to be transmitted with a transmitter at a first location, the signal having substantially line spectrum (col. 13, lines 20-43; col. 6, lines 42-53; col. 13, lines 19-28, 30-42);

modulating the signal to be transmitted for modulating the output signal to be transmitted, independently of a modulation technique selected for the purpose of signal transmission, to form a modulated signal (col. 15, lines 46-59);

transmitting the modulated signal from the first location (col. 13, lines 25-28);

receiving the modulated transmitted signal via a transmission circuit at a second location spatially separated from the first location (col. 16, lines 47-65; col. 17, lines 1-20).

Fullerton though discloses modulator for modulating transmitted signal however, does not explicitly disclose signal modulated so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased (the claim implies no substantial increase ***or*** decrease) (abstract; col. 2, lines 27-47; col. 6, lines 60-67; col. 16, lines 50-65). Faroudja in a similar field of endeavor discloses signal modulated so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased. It would have been obvious to a person of ordinary skill in the art at the time the

invention was made to use a signal modulated so that spectral lines of the output signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased as taught by Faroudja in the transmission system of Fullerton because it can provide energy (power) smoothing in the frequency domain of information bandwidth.

With reference to claim 79, system for transmission a digital signal comprising:
a first stationary part (transmitter base) (col. 2, lines 48-52; col. 13, lines 20-29)
a second movable part (mobile receiver) (col. 16, lines 47-65).
generating an output signal to be transmitted with a transmitter at a first location, the signal having substantially line spectrum (col. 13, lines 20-43; col. 6, lines 42-53; col. 13, lines 19-28, 30-42);
modulating the signal to be transmitted for modulating the output signal to be transmitted, independently of a modulation technique selected for the purpose of signal transmission, to form a modulated signal (col. 15, lines 46-59);
a transmitter for generating a transmitter output signal that includes a carrier and the data signal (col. 13, lines 25-28);
a receiver for receiving the transmitted output signal (col. 16, lines 47-65; col. 17, lines 1-20);
a transmission circuit coupling said transmitter to said receiver and for transmitting the transmitter output signal between said first stationary part and said second movable part (col. 13, lines 19-27);

a modulator coupled to said transmission circuit for generating a modulation signal (col. 13, lines 50-67);

a controller (voltage controlled oscillator) coupled to and controlling said modulator to generate the modulation signal and to apply the modulation signal at substantially any site in and along the transmission circuit to modulate the transmitter output signal so that a signal spectrum of the transmitter output signal is substantially distributed and a mean spectral power density of the transmitter output signal is reduced (col. 9, lines 58-64; col. 13, lines 34-50).

Fullerton though discloses modulator for modulating transmitted signal however, does not explicitly disclose signal modulated so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased (the claim implies no substantial increase ***or*** decrease) (abstract; col. 2, lines 27-47; col. 6, lines 60-67; col. 16, lines 50-65). Faroudja in a similar field of endeavor discloses signal modulated so that spectral lines of the out-put signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use a signal modulated so that spectral lines of the output signal are broadened to fill gaps between individual spectral lines, and a spectral power density of the output signal is reduced without a bandwidth of the output signal being substantially increased as taught by Faroudja in the transmission system of Fullerton

because it can provide energy (power) smoothing in the frequency domain of information bandwidth.

Regarding claims 43 and 61, Fullerton discloses a controller (voltage control oscillator) serves to control the modulator unit (col. 13, lines 34-42).

As per claims 44 and 62, Fullerton discloses the transmitter comprises a clock generator (col. 13, lines 34-42).

As per claims 45 and 63, Fullerton discloses modulator unit controls the clock generator appropriately for broadening the spectral lines (col. 13, lines 34-42; col. 14, lines 52-65; col. 16, lines 56-65).

Regarding claims 46 and 64, Fullerton discloses modulator unit subjects a cycle frequency of the clock generator to frequency modulation (col. 15, lines 54-59).

Regarding claims 47, 48, 65 and 66, Fullerton discloses the clock generator comprises a VCO as a frequency, determining element and adjust the VCO (col. 13, lines 34-40).

As per claim 49, 67 and 68, Fullerton discloses modulator unit subjects the signal to be transmitted to frequency (time and frequency are inter related) modulation (col. 13, lines 50-54; col. 14, lines 52-65).

Regarding claim 50, Fullerton discloses modulator unit subjects the carrier signal of the transmitting means in the transmitter or the transmitter output signal at substantially any site along the transmission circuit to frequency modulation. independently of a modulation technique selected the purpose of signal transmission (col. 15, lines 46-59).

Regarding claims 51, 69, 82 and 84, Fullerton discloses the carrier signal or the transmitter output signal is pulsed, and the modulator unit shifts (rotates, positions) or delays individual signal edges towards earlier or later points of time in proportion to a signal defined by an additionally provided modulation signal generator (col. 7, lines 34-38; col. 9, lines 43-50).

As per claims 52 and 70, Fullerton discloses the modulator unit comprises a delay control means for analyzing the transmitter output signal and for controlling a delay circuit which causes a shift or delay (col. 9, lines 42-63).

As per claims 53-55, 71, 72 and 73, Fullerton discloses delay control means comprises a PLL means, and the delay circuit comprises a flip-flop circuit (a delay circuit can in general comprise of flip-flop logic) (col. 18, lines 9-15).

Regarding claims 56 and 74, Fullerton discloses data coding by means of pseudo random noise is performed in addition to a modulation by the modulator unit (col. 1, lines 35-50).

Regarding claims 57 and 75, Fullerton discloses a second controller unit is provided in the receiver for controlling the receiver synchronously with the modulation performed by the modulator unit in the transmitter so that the signal received in the receiver is processed as an un-modulated signal, a synchronization between the transmitter or the transmission circuit and the receiver being achieved by means of the modulation signal (col. 10, lines 18-34).

Regarding claims 58 and 76, Fullerton discloses additional transmission circuit for a transmission of a synchronization signal for controlling the modulation of the transmitter and the receiver (abstract; col. 2, lines 48-54).

As per claims 77 and 80, Fullerton discloses transmission circuit is selected from a group consisting of a contact free (wireless) transmission circuit (col. 2, lines 10-28; col. 13, lines 9-18).

As per claim 78, Fullerton discloses signal comprises a digital signal (col. 12, lines 50-67).

Regarding claims 81 and 83, Fullerton discloses transmitter and receiver can be mobile relative to each other (col. 13, lines 3-15).

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Qutub Ghulamali whose telephone number is (571) 272-3014. The examiner can normally be reached on Monday-Friday, 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

QG.
October 2, 2006.

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER